

The January 2004 issue of *dpdINFO* featured **ENERGY STAR®** and **BUILT SMARTSM**—two programs that certify energy-efficient homes and help developers understand the benefits of energy- and resource-efficient construction. This month we focus on the University of Washington's (UW) cost-effective new sustainable student housing project.

case study

nordheim court

*the UW's
sustainably built
student housing*



Divided into eight, low-rise buildings that focus inwardly on a pond and small urban forest of large mature trees, Nordheim Court evokes an entirely different picture of student living than the large apartment blocks in the area.

The Nordheim Court project should help reduce cost concerns and build confidence in institutionalizing environmentally responsible practices in the UW's educational mission and its physical plant.

If you drove by the new apartment building just north of University Village, you wouldn't initially recognize it as housing for UW students. Divided into eight, low-rise buildings that focus inwardly on a pond and small urban forest of large mature trees, this project evokes an entirely different picture of student living than the large apartment blocks that loom along the edge of the hill above Montlake Boulevard just a few blocks to the south.

Also not readily apparent is the steps this project has taken to insure environmental impacts are minimized in a way that is cost-effective for the developer/property manager, Lorig Associates. Sustainable construction as an alternative to conventional materials and methods was introduced in early design stages by the architectural team at Mithun. Knowing the importance of environmental design, especially at universities, Lorig Associates and Mithun suggested the use of LEED™ (Leadership in Energy and Environmental Design) criteria, developed by the U.S. Green Building Council, as a way to benchmark the project's performance. (See page 2 for a list of LEED™ accomplishments.)

Green building advocates repeatedly make the claim that sustainable building is both cost-effective and a good investment. As often as not this assertion falls on deaf ears, as developers and owners look at unacceptably high initial construction costs for projects to incorporate green strategies.

Nordheim Court is a project that substantiates green building advocates' claims. With a construction budget of \$20 million and a total development budget of \$27.5 million, Lorig Associates and Mithun agree that the additional cost to achieve LEED™ certification is only \$44,000, about 0.2% of total first costs. Dayna Dealy, Lorig's project manager, says that as the developer and property manager, Lorig is in this for the long-term and the lower maintenance and utility costs are important. Designing for LEED™ early on means the total cost difference can be small.

But Lorig is as interested in finding smart, cost-saving, long-term financial strategies as in controlling first costs. They realize that sustainable building provides those long-term savings. Dealy instructed Mithun to design cost-saving sustainable strategies into the project, even if they didn't use LEED™ as a tool to prove performance. Early involvement and integration of the developer, owner, architect, consultants, contractor and subcontractors in sustainable building choices for the project was the key to effective cost management.

The evidence of the success of this early collaboration is a project that is as physically green—with planted interior courtyards, many over the parking garage—as it is green in its building strategies. A variety of courtyard treatments along with varied building massing, a rich mix of unit types, and diverse exterior building finishes creates a sense of intimate community that belies its high urban density of 52 units per acre.

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LEED™ Accomplishments at Nordheim Court

- **Added Transportation Options:** The University Village neighborhood just to the south of Nordheim Court is an auto-oriented neighborhood. The project team skillfully hid a 150-car parking garage below the northwest portion of the site, the only evidence of which is a ramp on 25th Avenue. With 146 units and 460 beds in the complex, not everyone gets a parking space. However, this location has easy access to public transportation and ample provisions have been made to encourage bicycle use. An electrical car fueling station in the garage encourages use of zero-emission cars.
- **Preserved Natural Features of Site:** The defining feature of the site is the pond at the southwest side of the property and trees planted in the 1930s and 1940s. The project team elected to save both and integrate them as part of the development.
- **Built in Energy Efficiency:** Upgraded insulation and passive solar design qualifies this project as a Seattle City Light BUILT SMARTSM project. With performance well beyond the stringent Washington State Energy Code, the project received financial incentives from City Light and will benefit from lower utility bills.
- **Diverted 81% of Construction Waste:** Walsh Construction, the general contractor, diverted 81% of their construction waste from the landfill by properly recycling cardboard, concrete, drywall, metal, and wood. Walsh reports they recycled 589 tons of construction debris using a combination of source-separated and comingled recycling containers. Since the tip fees for source-separated recycling are much less than comingled, they saved \$14,582, even after subtracting the labor costs to monitor the boxes and all related activities of dedicated personnel. They could not have saved this money if they had only used a comingled box.
- **Used 35% Recycled Content Products:** Using the LEED™ calculator, a total of 35%, of the building materials installed contain recycled content, reducing the need to extract virgin materials.
- **Bought Local Materials:** Harvested and manufactured lumber, manufactured fiber cement siding, gypsum wall board, vinyl windows, etc., are locally manufactured, which strengthens the local economy and reduces transportation impacts.
- **Followed Construction Indoor Air Quality Plan:** Walsh Construction executed the IAQ management plan with excellent collaboration of subcontractors, especially the HVAC subcontractor. Walsh worked to keep the building dry and minimize dust generated. In order to install super efficient MERV 14 filtration media, the HVAC sub contractors modified the air conditioning units after keeping all the HVAC units and duct openings sealed until the completion.
- **Used Low Emitting Materials:** All sealants, adhesives and paints in the project contain no VOCs (volatile organic compounds), exceeding LEED™ standards. Carpets contain very low levels of VOCs and comply with the Carpet and Rug Institute Green Label program.
- **High Fly Ash Content Concrete:** Fly ash was substituted for 43% of the cement in the architectural concrete, reducing the pressure on our landfills as well as limiting the cementitious content to less than 600 pounds per cubic yard.
- **Educated Tenants and Visitors** of sustainable features via tenant manuals and project signage.



Nordheim Court's diversity of courtyard treatments—along with varied building massing, a rich mix of unit types, and diverse exterior building finishes—creates a sense of intimate community that belies its high urban density of 52 units per acre.

Learn More

Learn more about Nordheim Court on Lorig's website, www.lorig.com/cs_nordheim.htm, or the UW Housing and Food Services website, hfs.washington.edu/student_housing/family_apartments/communities/blakeley.

To find out about Seattle City Light's BUILT SMARTSM Program, visit www.seattle.gov/light/conserve/business.

To learn more about LEED™ certification, visit www.usgbc.org.

To explore DPD's role in sustainable building, visit www.seattle.gov/dpd/sustainability or contact:

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